

Customer No. 24498
Attorney Docket No. PU020417
Final Office Action Date: 01/07/2009

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IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An apparatus for providing reserved connections between end stations, in a network capable of providing prioritized communications, comprising:

a switch in packet communication with the end stations,

wherein the switch is adapted to detect and forward packets that contain prioritized data for priority processing, and packets that include requests for reserved connections according to a given reservation protocol,

wherein the switch comprises a plurality of output queues associated with egress ports of the switch that correspond to different priorities associated with received priority packets, wherein the plurality of output queues comprise ~~at least one~~ a plurality of additional output queues for reserved connections, wherein each additional output queue ~~that~~ is established and associated only with reserved connection data packets for one reserved connection path at a given time,

wherein the switch is operable for, in response to a reserved connection request, determining whether there is sufficient bandwidth available to establish a reserved connection path within the network, and if so, establishing a reserved connection path and allocating the bandwidth for the reserved connection path, and for, in response to each packet received at the input of the switch, determining whether the packet is associated with the reserved connection path and forwarding those packets to the additional output queue on the egress port associated with the reserved connection path for transport to the intended destination.

2. (Original) The apparatus of claim 1, wherein the network comprises an ethernet network.

3. (Original) The apparatus of claim 1, wherein a plurality of said switches are coupled to one another in cascading fashion between the end stations for providing the reserved connection path there between, each switch operable for receiving a reserved connection request, determining and allocating its own available bandwidth, and forwarding the reserved connection path request to the next downstream switch.

Customer No. 24498
Attorney Docket No. PU020417
Final Office Action Date: 01/07/2009

4. (Original) The apparatus of claim 1, wherein the switch determines which egress port is associated with the reserved connection based on an internal mapping table.

5. (Original) The apparatus of claim 4, wherein the switch is operable for forwarding the reserved connection request to all output ports when the internal mapping table does not include the requested destination address.

6. (Original) The apparatus of claim 3, wherein when one of said switches determines insufficient available bandwidth, said one switch is operable to generate a signal indicating denial of bandwidth allocation back toward the requesting device.

7. (Original) The apparatus of claim 1, wherein the switch operates at one of service layer 2 and service layer 3.

8. (Original) The apparatus of claim 1, wherein the reservation protocol is RSVP.

9. (Currently Amended) In an ethernet network system comprising a plurality of ethernet end stations, a switch for communicating packets of information between at least two of the end stations, the switch comprising:

an input for receiving packets from one of the at least two end stations;

a plurality of output queues associated with egress ports that correspond to different priorities associated with received priority packets, wherein the plurality of output queues comprise at least one a plurality of additional output queues for reserved connections, wherein each additional output queue that is established and associated only with reserved connection data packets for one reserved connection path at a given time,

a packet sorter responsive to each of the packets received at the input, for determining at least one of a) packet type; and b) packet priority, and placing each packet in a corresponding output queue corresponding to the priority of the packet when the packet type received is a priority type, and for placing received reserved connection data packets on the at least one additional output queue when the packet type received is a reserved connection type,

Customer No. 24498
Attorney Docket No. PU020417
Final Office Action Date: 01/07/2009

a detector for detecting whether the received packet includes a request for a reserved connection according to a given reservation protocol, and

an allocator responsive to the detection of a request for a reserved connection, for determining if there is sufficient bandwidth for establishing a reserved connection path between at least two end stations and allocating sufficient bandwidth for establishing the reserved connection path between the end stations.

10. (Original) The system of claim 9, wherein a plurality of switches are coupled to one another in cascading fashion between the end stations for providing the reserved connection path there between, and wherein each switch is operable for receiving a reserved connection request forwarded from an upstream device, determining and allocating its own available bandwidth, and directly forwarding the reserved connection path request to a next downstream device according to its own internal mapping table.

11. (Original) The system of claim 10, wherein each switch examines at least one of MAC address information and IP address information of each packet for processing said packet.

12. (Original) The system of claim 11, wherein the switch compares the input packet address information with pair addresses stored in memory, and wherein, if the pairs match, indicative of a reserved connection packet, the particular packet is sent to the at least one additional output queue.

13. (Currently Amended) A method for providing a reserved connection between end stations, in a network capable of providing prioritized communications, comprising:

a first network switch device receiving and detecting prioritized packets and packets that include requests for reserved connections according to a predetermined reservation protocol;

the first network switch device forwarding the prioritized packets;

determining, by said first network switch device, whether sufficient bandwidth is available for establishing a reserved connection path; and, if so, establishing a reserved connection path between end stations in a network and reserving resources along the reserved connection path to provide the requested reserved connection along the reserved connection path,

Customer No. 24498
Attorney Docket No. PU020417
Final Office Action Date: 01/07/2009

including allocating, for a given time, one of a plurality of an output queues set aside for reserved connections queue within said first network switch device for buffering only those reserved connection data packets to be transmitted on the reserved connection path for that particular reserved connection, at a given time.

14. (Previously Presented) The method of claim 13, further comprising parsing in said first network switch device header information including ethernet address, IP address, and TCP address information to determine whether the received packet is a bandwidth reservation request message.

15. (Original) The method of claim 14, wherein MAC addresses are stored and compared with packet information for determining reserved connection stream packets and end station devices on a homogeneous ethernet network.

16. (Original) The method of claim 14, wherein IP addresses are stored and compared with packet information for determining reserved connection stream packets and end station devices on a heterogeneous network.

17. (Previously Presented) The method of claim 13, wherein reserving resources along the reserved connection path to provide the requested reserved connection along the reserved connection path comprises the first network switch device forwarding the reserved connection request to a second network switch device in the path downstream from the first network switch device.